Department of Natural Resources

Lake Michigan Ozone Study (LMOS) Update

Implications for Wisconsin

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2008 ozone NAAQS implementation

- Wisconsin has two areas in nonattainment for the 2008 ozone standard: Sheboygan County and eastern Kenosha County.

- State was required to submit plans showing how areas will attain the standard by July 20, 2018.
  - Kenosha area attainment plan submitted on April 17, 2017
  - Sheboygan County attainment plan submitted September 25, 2017.

- Neither area attained the 2008 ozone NAAQS by July 2018.
  - Sheboygan is eligible for a one-year extension (to July 20, 2019)
  - Kenosha will be "bumped-up" to "serious" classification no later than January 2019 (Clean Air Act requirement). Will need to attain by July 20, 2021
  - EPA expected to propose these actions in October 2018.

2008 ozone NAAQS implementation

- Permitting changes due to bump-up to "serious":
  - Major source threshold goes to 50 TPY (down from 100 TPY)
  - VOC/NOx offset ratios go to 1.2:1 (up from 1.15:1)
- Type A and C ROP emission caps change from 25 to 12.5 TPY VOC and NOx
  - Existing ROP A & C sources can be covered under ROP B permit
- Type B ROP emission caps change from 50 to 25 TPY VOC and NOx.
  - Existing ROP B sources will need to obtain individual permits before bump-up is effective.

2015 ozone NAAQS designations

EPA has finalized area designations in Wisconsin for the 2015 ozone NAAQS, effective August 3, 2018

Counties	Final Designation	Comment
Door Manitowoc Sheboygan Ozaukee Milwaukee Kenosha	Nonattainment (partial)	• Final areas in these counties are all smaller than EPA proposed in its 120-day letter. • Boundaries closely follow the science-based "distance from the shoreline" contour described by DNR in its submittals to EPA.

- All areas are classified as "marginal" nonattainment with an attainment date of August 2021

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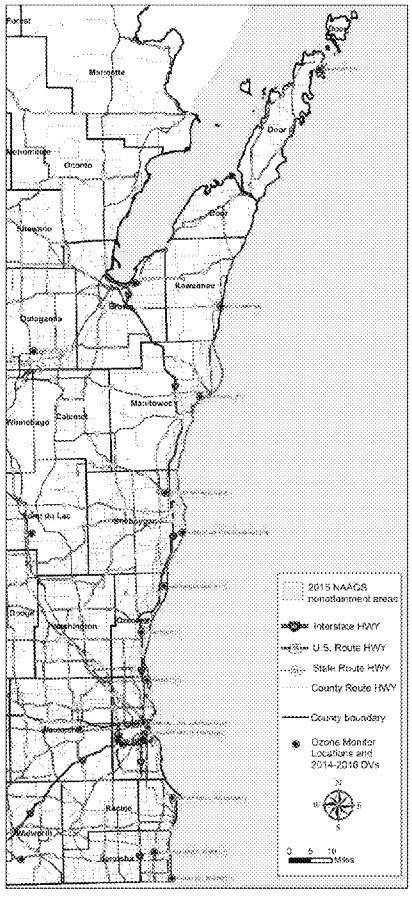
EPA's Final 2015 Ozone NAAQS Nonattainment Area Designations

All areas of Wisconsin

Data from EPA's final area designations
https://www.epa.gov/ozone-designations/additional-designations-2015-ozone-standards



Modeling needs associated with implementing the 2008 and 2015 ozone NAAQS

- 2008 NAAQS: WDNR is working with Illinois, Indiana, and LADCO to develop the required attainment plan to show how the Chicago IL-IN-WI area will attain the 2008 ozone NAAQS by the moderate area attainment date of July 20, 2021.
  - Attainment will be based on 2018-2020 data.

- 2015 NAAQS: EPA is determining modeling needed to support any moderate area attainment plans developed for this NAAQS (due August 2024)
  - Currently doesn't impact Wisconsin (all marginal areas), but this will eventually help any areas within LADCO that do not attain by the marginal area attainment date of August 2021.

- The technical and modeling support for this required work will be informed by LMOS data and results.

EPA recognizes that Wisconsin ozone is impacted by transport and out-of-state emissions

EPA's final 2015 ozone designations in Wisconsin reflected information provided by WDNR that described the latest knowledge about ozone transport in the region.

- WDNR-provided data and analyses demonstrated that high-ozone air that might exceed the 2015 ozone NAAQS is limited to a narrow area along the lakeshore.
- WDNR analyses showed that high ozone area was transported from over Lake Michigan.
- Modeling provided by Wisconsin/LADCO showed the influence of other state emissions relative to Wisconsin.

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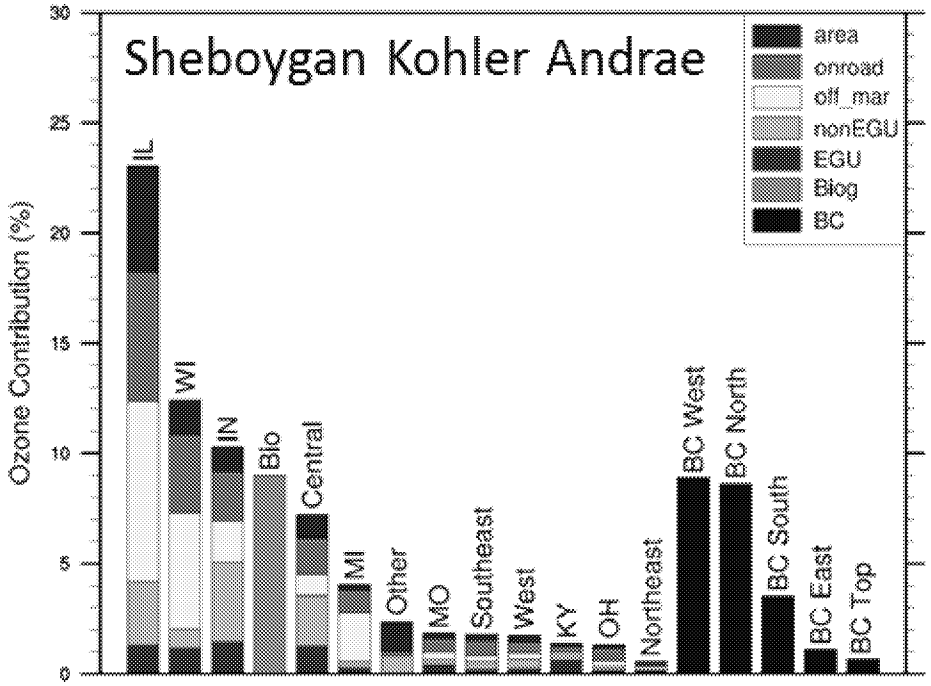
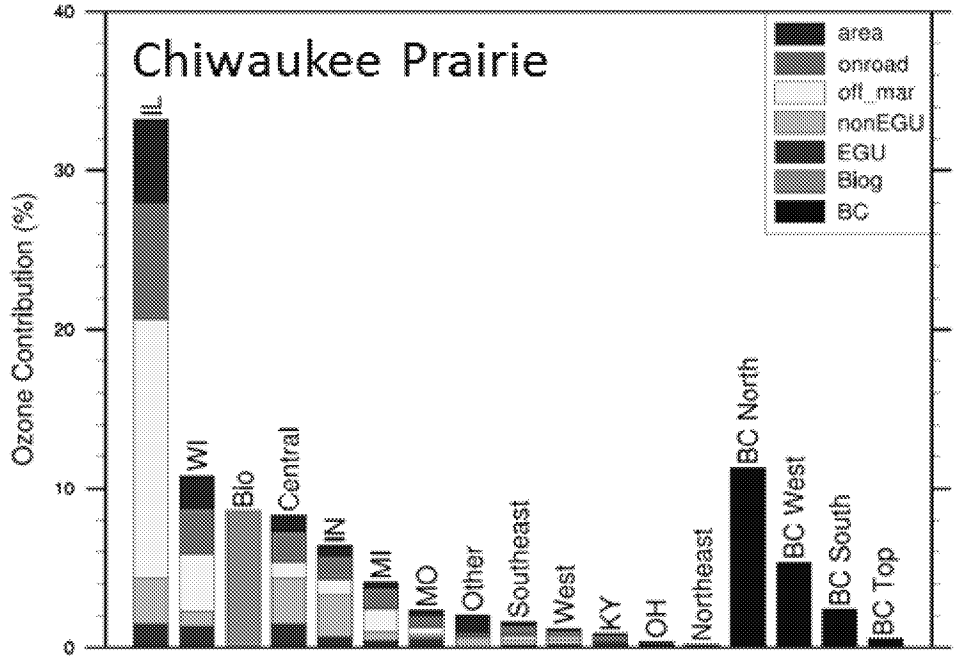
Source apportionment results – Sheboygan County



Source apportionment results – Kenosha County



How is LMOS informing ozone-related policy?

- LMOS results will inform improvements the in models Wisconsin relies upon when implementing the ozone standards.
- LMOS data may help indicate if it is more important to control VOCs or NOx in the Lake Michigan region to influence ozone levels.
- LMOS taught us more about the structure and depth of the lake breeze, which can be better reflected in the models used to forecast future year ozone concentrations.
- LMOS will help agencies further define the extent of inland penetration of the lake breeze.

How is LMOS informing ozone-related policy?

- LMOS results are expected to highlight where states need to refine and improve their emissions inventories.
- LMOS observed significant transported smoke during the second part of the campaign. This could help us understand how smoke may influence ozone levels and provided useful information for future exceptional event demonstrations.

Thank you!

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